

Amendments to the Claims

The current listing of the claims replaces all previous amendments and listings of the claims.

1. (Currently Amended) An optical write apparatus comprising:

a plurality of substrates each having a ~~large~~ number of light emitting diodes aligned in one direction, the plurality of substrates being shifted from each other in the aligning direction of the light emitting diodes to overlap in a direction disposed at an angle to the aligning direction of the light emitting diodes,

wherein two substrates adjacent to each other in the aligning direction of the light emitting diodes are fixed to each other.

2. (Original) An optical write apparatus comprising:

a plurality of substrates each having a large number of light emitting diodes aligned in one direction, the plurality of substrates being shifted from each other in the aligning direction of the light emitting diodes; and

auxiliary members interposed between the substrate adjacent in the aligning direction of the light emitting diodes,

wherein fixed points between the auxiliary members and the substrates are aligned in a line that is perpendicular to the aligning direction of the light emitting diodes.

3. (Original) The optical write apparatus as claimed in claim 2, wherein the auxiliary members, together with the substrates, constitute a plurality of light emitting diode array units, and include holding members for holding the substrates and a connecting member for connecting the substrates.

4. (Original) The optical write apparatus as claimed in claim 3, wherein:

the plurality of light emitting diode array units are shifted from each other in the aligning direction of the light emitting diodes, the adjacent light emitting diode array units being connected via the connecting member; and

fixed points for fixing the substrate of one of the adjacent light emitting diode array units to the corresponding holding member and for fixing the holding member to the connecting member, and fixed points for fixing the substrate of the other one of the adjacent light emitting diode array units to the corresponding holding member and for fixing the holding member to the connecting member are aligned in a line that is perpendicular to the aligning direction of the light emitting diodes.

5. (Original) The optical write apparatus as claimed in claim 4, comprising three or more light emitting diode array units, wherein:

both ends of a center light emitting diode array unit of any three adjacent light emitting diode array units are fixed to the two end light emitting diode array units in the aligning direction of the light emitting diodes;

the fixed points for fixing the substrate to the holding member and for fixing the holding member to the connecting member in the center light emitting diode array unit and one of the two end light emitting diode array units are aligned in a line that is perpendicular to the aligning direction of the light emitting diodes; and

the fixed points in the center light emitting diode array unit and the other one of the two end light emitting diode array units are also aligned in a line that is perpendicular to the aligning direction of the light emitting diodes.

6. (Original) The optical write apparatus as claimed in claim 3, wherein:

a part of each of the substrates protrudes from each corresponding holding member;

the protruding part of each of the substrates is fixed to the protruding part of the adjacent substrate; and

the fixed points between the connecting member and the holding members are replaced by fixed points for fixing the protruding parts of the adjacent substrates to each other.

7. (Original) The optical write apparatus as claimed in claim 1, wherein one or more fixed points between the substrates adjacent to each other in the aligning direction of the light emitting diodes correspond to write dot switching points on the substrates.

8. (Currently Amended) ~~The~~ An optical write apparatus ~~as claimed in claim 1,~~
~~further~~ comprising:

a plurality of substrates each having a large number of light emitting diodes aligned in one direction, the plurality of substrates being shifted from each other in the aligning direction of the light emitting diodes, wherein two substrates adjacent to each other in the aligning direction of the light emitting diodes are fixed to each other; and

an array position adjusting unit that adjusts relative positions of the substrates adjacent to each other in the aligning direction of the light emitting diodes.

9. (Original) The optical write apparatus as claimed in claim 8, wherein:
the array position adjusting unit connects a pair of connecting members adjacent to each other in the aligning direction of the light emitting diodes via an adjusting screw;

one of the pair of connecting members is fixed to one of the adjacent substrate and the adjacent light emitting diode array unit; and

the other one of the pair of connecting members is fixed to the other one of the adjacent substrate and the adjacent light emitting diode array unit.

10. (Currently Amended) ~~The~~ An optical write apparatus ~~as claimed in claim 1,~~
~~further~~ comprising:

a plurality of substrates each having a large number of light emitting diodes aligned in one direction, the plurality of substrates being shifted from each other in the aligning

direction of the light emitting diodes, wherein two substrates adjacent to each other in the aligning direction of the light emitting diodes are fixed to each other; and

a focusing unit that displaces a first substrate of two adjacent substrates with respect to a second substrate of the two adjacent substrates in a focusing direction that is equivalent to a thickness direction of the second substrate.

11. (Original) The optical write apparatus as claimed in claim 10, wherein the focusing unit comprises:

a plate-like connecting member respectively fixed to the two adjacent substrates;
an adjusting plate that faces the connecting member, and is fixed to the connecting member on the side of the second substrate and to a fixed member; and

a first external force unit that supplies an external force to the connecting member by varying a gap between the connecting member and the adjusting plate on the side of the first substrate, and

the external force supplied by the first external force unit deforms and displaces with respect to a fixed point between the connecting member and the adjusting plate, so that the second substrate is moved with respect to the first substrate in the focusing direction to focus the light emitted from the light emitting diodes aligned on the second substrate.

12. (Currently Amended) The optical write apparatus as claimed in claim ~~10~~ 11, wherein a point where the external force is supplied by the first external force unit on the connecting member is located at a position that faces the second substrate.

13. (Original) The optical write apparatus as claimed in claim 10, wherein the focusing unit is disposed at each of left and right ends of a light emitting diode array unit, with a line passing through the center point between the first substrate and the second substrate being a symmetrical axis.

14. (Currently Amended) ~~The~~ An optical write apparatus ~~as claimed in claim 1,~~
~~further~~ comprising:

a plurality of substrates each having a large number of light emitting diodes aligned in one direction, the plurality of substrates being shifted from each other in the aligning direction of the light emitting diodes, wherein two substrates adjacent to each other in the aligning direction of the light emitting diodes are fixed to each other; and

a vertical direction adjusting unit that moves one of the two substrates adjacent to each other in the aligning direction of the light emitting diodes with respect to the other one of the two adjacent substrates, so that light emitted from the light emitting diodes on the moved substrate is adjusted in a vertical direction in which the light emitted from the light emitting diodes on the moved substrate moves toward and away from light emitted from the light emitting diodes on the other substrate.

15. (Original) The optical write apparatus as claimed in claim 14, wherein the vertical direction adjusting unit comprises:

a plate-like connecting member fixed to the two substrates adjacent to each other in the aligning direction of the light emitting diodes;

an adjusting plate fixed to a fixed member and to the connecting member at a fixed position of the other one of the two adjacent substrates to the connecting member;

a second external force unit that narrows and widens a gap between the connecting member and the adjusting plate; and

a supporting member that is in contact with the connecting member and the adjusting plate at a mid point between the fixed position and the second external force unit.

16. (Original) The optical write apparatus as claimed in claim 14, wherein the vertical direction adjusting unit is disposed at each of left and right ends of the other one of

the two adjacent substrates, with a line passing through the center point between the two adjacent substrates being a symmetrical axis.

17. (Currently Amended) The optical write apparatus as claimed in claim 1 2, further comprising:

a focusing unit that displaces one of the two substrates, which are adjacent to each other in the aligning direction of the light emitting diodes, in the thickness direction of the displaced one of the two adjacent substrates; and

a vertical direction adjusting unit that moves the one of the two adjacent substrates so as to adjust light emitted from the moved substrate in a vertical direction in which the light emitted from the moved substrate moves toward and away from light emitted from the other one of the two adjacent substrates.

18. (Original) The optical write apparatus as claimed in claim 17, wherein:

the focusing adjusting unit comprises a plate-like connecting member fixed to the two substrates adjacent to each other in the aligning direction of the light emitting diodes, an adjusting plate fixed to a fixed member and the connecting member at a fixed position on the side of the displaced and moved substrate, and a third external force unit that narrows and widens a gap between the connecting member and the adjusting plate on the side of the other one of the two adjacent substrates; and

the vertical direction adjusting unit comprises a fourth external force unit that narrows and widens the gap between the connecting member and the adjusting plate by applying an external force to the end portion of the connecting member on the side of the other one of the two adjacent substrates, with a part of the third external force unit being a supporting point.

19. (Original) The optical write apparatus as claimed in claim 17, wherein the focusing unit and the vertical direction adjusting unit are disposed on each of left and right

ends of a light emitting diode array unit, with a line passing through the center point between the two adjacent substrates being a symmetrical axis.

20. (Currently Amended) The optical write apparatus as claimed in claim ~~10~~ 17, wherein:

the auxiliary member is movably attached to the substrates;

the focusing unit, the vertical direction adjusting unit, the substrates, and the auxiliary member constitute an integrated structure; and

one of the components of the integrated structure is fixed as a third adjusting plate to common supporting member employed as the fixed member.

21. (Original) The optical write apparatus as claimed in claim 20, wherein the substrates and the auxiliary member are fixed to the common supporting member by an auxiliary supporting unit at a given location on the alignment of the light emitting diodes.

22. (Original) The optical write apparatus as claimed in claim 21, wherein the auxiliary supporting unit supports the substrates and the auxiliary member, so that the substrates and the auxiliary member are movable in the aligning direction of the light emitting diodes, and that the positions of the substrates and the auxiliary member can be adjusted in the vertical direction and the focusing direction.

23. (Original) The optical write apparatus as claimed in claim 20, wherein the common supporting member includes attachment units that attach the common supporting member to an attaching member and adjusts the common supporting member in the focusing direction, the attachment units disposed on either end thereof in the aligning direction of the light emitting diodes.

24. (Original) The optical write apparatus as claimed in claim 11, wherein the first external unit is constituted by a screw unit disposed between the connecting member and the adjusting plate.

25.-37. (Canceled)

38. (Original) An image forming apparatus comprising:
a photosensitive member that is uniformly charged; and
an optical write apparatus that irradiates the photosensitive member so as to form a latent image to be turned into a visible image,
wherein:

the optical write apparatus comprises a plurality of substrates each having a great number of light emitting diodes aligned in one direction, the plurality of substrates being shifted from one another in the aligning direction of the light emitting diodes, and, among the plurality of substrates, every two substrates adjacent to each other in the aligning direction of the light emitting diode being fixed to each other.

39. (Canceled)

40. (Original) A method of positioning an optical write apparatus to be attached to an image forming apparatus, the optical write apparatus comprising a plurality of substrates each having a great number of light emitting diodes aligned in one direction, the substrates being shifted from one another in a horizontal direction, the method comprising the steps of:

displacing the optical write apparatus from an image forming apparatus, so that one of two substrates adjacent to each other in the horizontal direction is positioned in a focusing direction that corresponds to the thickness direction of the substrate; and

displacing the other one of the adjacent substrates from the optical write apparatus, so that the other one of the adjacent substrates is positioned in the focusing direction that corresponds to the thickness direction of the substrate.

41. (Original) The method as claimed in claim 40, further including the step of after positioning the other one of the adjacent substrates in the focusing direction, moving the other one of the adjacent substrates while steadying the one of the adjacent substrates, so that

light emitted from the light emitting diodes on the other one of the adjacent substrates moves in a vertical direction toward or away from light emitted from the light emitting diodes on the one of the adjacent substrates.

42. and 43. (Canceled)

44. (New) The optical write apparatus as claimed in claim 1, wherein the plurality of substrates at least partly overlap in the direction about perpendicular to the aligning direction of the light emitting diodes.